

Claims

1. An isolated, substantially purified nucleotide sequence chosen from the group comprising SEQ. ID. NO. 1 - 12 and homologues thereof.
2. A nucleotide sequence which is complementary to the sequence according to claim 1.
- 5 3. A nucleotide sequence which hybridises under stringent conditions to a sequence according to claim 1.
4. A nucleotide sequence according to claim 1, wherein the homology is at least 70, 80, 90, 95 or 98 %.
- 10 5. An isolated, substantially pure nucleotide sequence induced in differentiated mammalian cells by the addition of a thiazolidinedione, such as pioglitazone, characterized in that said sequence is homologous to a sequence chosen among SEQ. ID. NO. 1 - 12.
6. A nucleotide sequence according to claim 5, characterized in that the differentiated mammalian cells are adipocytes.
- 15 7. A method for evaluating substances for insulin regulating properties *in vitro* in a culture of mammalian cells, characterized in that a sequence according to claim 1 is used as a marker for insulin regulating action.
8. Method for evaluating substances for insulin regulating properties *in vitro* in a culture of mammalian cells, characterized in that a transcript according to claim 5 is used as a marker for insulin regulating action.
- 20 9. Method according to claim 7, characterized in that adipocytes are used as model cells.
10. Method according to claim 8, characterized in that adipocytes are used as model cells.
11. Method according to claim 7, characterized in that hepatic cells are used as model cells.
12. Method according to claim 8, characterized in that hepatic cells are used as model cells.
- 25 13. Method according to claim 7, characterized in that muscle tissue cells are used as model cells.

14. Method according to claim 8, **characterized** in that muscle tissue cells are used as model cells.

15. Method according to claim 7, **characterized** in that pancreatic cells are used as model cells.

5 16. Method according to claim 8, **characterized** in that pancreatic cells are used as model cells.

17. A substance identified as having insulin regulating properties using the method according to any one of claims 7 - 16.

10 18. Use of a sequence according to claim 1, or information derived therefrom, for the manufacture of a medicament.

19. Use of a sequence according to claim 1, or information derived therefrom, for the manufacture of a veterinary preparation.

20. Use of a sequence according to claim 1, or information derived therefrom, for the manufacture of a medicament for the treatment of diabetes.

15 21. Use of a sequence according to claim 1, or information derived therefrom, for the manufacture of a medicament for the treatment of obesitas.

22. Use of a sequence according to claim 5, or information derived therefrom, for the manufacture of a medicament.

20 23. Use of a sequence according to claim 5, or information derived therefrom, for the manufacture of a veterinary preparation.

24. Use of a sequence according to claim 5, or information derived therefrom, for the manufacture of a medicament for the treatment of diabetes.

25. Use of a sequence according to claim 5, or information derived therefrom, for the manufacture of a medicament for the treatment of obesitas.

25 26. Use of a substance according to claim 17, for the manufacture of a medicament.

27. Use of a substance according to claim 17, for the manufacture of a veterinary preparation.

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28. Use of a substance according to claim 17, for the manufacture of a medicament for the treatment of diabetes.
29. Use of a substance according to claim 17, for the manufacture of a medicament for the treatment of obesity.
30. A pharmaceutical composition, comprising a substance according to claim 17 in a pharmaceutically effective amount.
31. A veterinary preparation, comprising a substance according to claim 17 in an physiologically effective amount.
32. An assay for the screening of substances in respect of their insulin regulating properties, **characterized** in that a sequence according to claim 1 or 5 is used as marker for insulin regulating properties.
33. A substance having insulin regulating properties, identified using an assay according to claim 32.
34. An assay for the diagnosis of IRS-2 related metabolic disorders and/or differentiating between various types or stages of the disorder, **characterized** in that a sequence according to claim 1 or information derived therefrom is used in said assay.
35. An assay for the diagnosis of diabetes and/or differentiating between various types or stages of the disease, **characterized** in that a sequence according to claim 1 or information derived therefrom is used in said assay.
36. A method for determining if a patient in need of treatment with an insulin regulating substance has the predisposition to respond to the treatment, **characterized** in that the activation of IRS-2 is measured, e.g. by determining the amount or relative increase/decrease of the IRS-2 protein, or the corresponding mRNA when administering the insulin regulating substance in question to a sample of cells taken from the patient.
37. A method for determining if a patient in need of treatment with an insulin regulating, e.g. insulin regulating substance has the predisposition to respond to the treatment, wherein at least one sequence chosen among SEQ.ID.NO. 1 – 12 is used as a marker when

administering the insulin regulating substance in question to a sample of cells taken from the patient.

38. A method according to claim 36 or 37, **characterized** in that the cells taken from the patient are chosen among blood cells, adipocyte cells, muscle cells, and liver cells.

39. A method according to claim 36 or 37, **characterized** in that the cells are blood cells.

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